

## First Hit

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TITLE: Mucosal boosting following parenteral priming

## Brief Summary Text:

[0012] Certain prime-boost methods of immunization have been described. In particular, genetic immunizations involving polynucleotides as have been described. (See, e.g., WO 01/81609; WO 00/11140; Cooney et al. (1993) Proc Nat'l Acad Sci USA 90(5):1882-1886, describing induction of an immune response by intramuscular priming with a recombinant vaccinia (vac/env) virus expressing HIV-1 envelope and intramuscular boosting with a gp160 glycoprotein derived from a recombinant baculovirus (rgp160); Bruhl et al. (1998) AIDS Res Hum Retroviruses 14:401-407, describing mucosal priming with recombinant vaccinia followed by parenteral priming; and Eo et al. (2001) J. Immunol. 166:5473-5479, describing mucosal prime and mucosal boost with recombinant vaccinia virus expressing the gB protein of HSV). Lee et al. (1999) Vaccine 17:3072-3082, describes mucosal prime and parenteral boosting regimes using recombinant Helicobacter pylori urease vaccine.

## Description of Disclosure:

[0029] FIG. 1 is a graph depicting enhancement of serum and vaginal antibody responses against HIV envelope peptides following systemic prime and mucosal boost immunizations. The diagonal stripes bars show serum antibody while the gray bars show titers from vaginal washes. The various modes of delivery and adjuvants are indicated on below the bars on the horizontal axis.

## Description of Disclosure:

[0060] The parenteral prime-mucosal boost methods described herein can involve parenteral and mucosal administration of one or more antigens (or polynucleotides encoding these antigens). For purposes of the present invention, virtually any polypeptide or polynucleotide can be used. Antigens can be derived from any of several known viruses, bacteria, parasites and fungi, as well as any of the various tumor antigens or any other antigen to which an immune response is desired. Furthermore, for purposes of the present invention, an "antigen" refers to a protein that includes modifications, such as deletions, additions and substitutions (generally conservative in nature), to the native sequence, so long as the protein maintains the ability to elicit an immunological response. These modifications may be deliberate, as through site-directed mutagenesis, or may be accidental, such as through mutations of hosts that produce the antigens. Antigens that are particularly useful in the practice of the present invention include polypeptide antigens derived from pathogens that infect or are transmitted through mucosal surfaces. Non-limiting representative examples of pathogens transmitted through mucosal surfaces and antigens derived therefrom include antigens derived from bacterial pathogens (e.g., Neisseria meningitidis, Streptococcus agalactia, Haemophilus influenzae, Streptococcus pneumoniae, chlamydia, gonorrhea and syphilis), viral pathogens (e.g., Human Immunodeficiency Virus ("HIV"), Hepatitis B and C Virus ("HBV" and "HCV", respectively), Human Papilloma Virus ("HPV"), Herpes Simplex Virus ("HSV"), and the like), as well as parasitic, fungal and cancer antigens. For a discussion of Chlamydia pneumoniae and Chlamydia trachomatis, see Kalman et al. (1999) Nature Genetics 21:385-389; Read et al. (2000) Nucleic Acids Research 28:1397-1406; Shirai et al. (2000) J. Infect. Dis. 181(Suppl.3):S524-S527; WO 99/27105; WO 00/27994; WO 00/37494; WO 99/28457.

Description of Disclosure:

Serum IgG and Vaginal Wash IgA Titers following Parenteral Prime--Mucosal Boost with HIV Antigens

Description of Disclosure:

Serum Titers After Parenteral Priming and Mucosal Boosting with HIV Antigens

Description of Disclosure:

Vaginal Wash IgA Titers After Parenteral Priming and Mucosal Boosting

Description of Disclosure:

Titers Following Parenteral Prime--Mucosal Boost with Neisseria Meningitidis B (MenB)-PLG

Description of Disclosure:

Serum IgG and Vaginal Wash IgA Titers Following Parenteral Prime--Mucosal Boost with Neisseria Meningitidis or Hemophilus Influenza (HIB) Antigens